

ADDITIONAL MATERIALS TOWARD A MONOGRAPH OF THE GENUS  
CALLICARPA. VII

Harold N. Moldenke

CALLICARPA L.

Additional synonymy: Callicarppa Mak. apud Liu, *Illustr. Nat. & Introd. Lign. Pl. Taiwan* 2: 1208, sphalm. 1962.

Additional & emended bibliography: J. Matsum., *Bot. Mag. Tokyo* 3: 318. 1889; A. S. Hitchc., *Ann. Rep. Mo. Bot. Gard.* 4: 118. 1893; C. B. Clarke in J. Schmidt, *Bot. Tidsskr.* 26: 171--172. 1904; Shirasawa, *Nippon Shinrin Jumoku* [Icon. Ess. Forest. Jap.] 2: pl. 70, fig. 1--27. 1908; Yabe, *Indust. Mat. Bur. Agr. S. Wanch. Ry. Co.* 12: [Fl. Tsingtau] 96. 1919; Nakai, *Trees & Shrubs Indig. Jap.*, ed. 1, 336. 1922; L. H. Bailey, *Man. Cult. Pl.*, ed. 1, pr. 1, 633 & 804 (1924) and pr. 2, 633 & 804. 1925; Makino & Tanaka, *Man. Fl. Nipp.* fig. 187. 1927; Terasaki, *Nippon Shokubutsu Zufu* [Jap. Bot. Illustr. Album] fig. 1592. 1933; Tu, *Chinese Bot. Dict.*, abrdg. ed., 310 & 1103. 1933; L. H. Bailey, *Man. Cult. Pl.*, ed. 1, pr. 3, 633 & 804. 1938; Makino, *Ill. Fl. Nippon* fig. 560. 1940; L. H. Bailey, *Man. Cult. Pl.*, ed. 1, pr. 4, 633 & 804 (1941), pr. 5, 633 & 804 (1944), and ed. 2, 844 & 1045. 1949; E. H. Walker, *Bibliog. East. Asiat. Bot. Suppl.* 1: 235. 1960; Diaconescu, *Lucra. Grad. Bot. Bucarest.* [Act. Bot. Hort. Bucarest.] 1960: 361--363. 1960; Liu, *Illustr. Nat. & Introd. Lign. Pl. Taiwan* 2: 1202--1212, pl. 1010--1020. 1962; Rolla, *Bull. Bot. Surv. India* 5: 188 & 205. 1963; Srinivasan & Agarwal, *Bull. Bot. Surv. India* 5: 86. 1963; Deb, *Bull. Bot. Surv. India* 5: 53. 1963; H. L. Hoffman, *Castanea* 29: 31. 1964; T. A. Rao, *Bull. Bot. Surv. India* 6: 47, 48, & 54. 1964; Balakrishnan, *Bull. Bot. Surv. India* 6: 82 & 86--87. 1964; Panigrahi, Chowdhury, Raju, & Deka, *Bull. Bot. Surv. India* 6: 239 & 255. 1964; Sen & Naskar, *Bull. Bot. Surv. India* 7: 38. 1965; E. E. Lord, *Shrubs & Trees Austral. Gard.*, rev. ed., 250. 1964; Rao & Joseph, *Bull. Bot. Surv. India* 7: 139 & 149. 1965; Mukerjee, *Bull. Bot. Surv. India* 7: 135. 1965; Rodgers & Shake, *Castanea* 30: 163. 1965; J. E. Moore, *Castanea* 30: 26. 1965; Reese & Thieret, *Castanea* 31: 253 & 274. 1966; Kawazu & Mitsui, *Tetrahedron Lett.* 30: 3519--3524. 1966; J. S. Beard, *Descr. Cat. W. Austr. Fl.* 91. 1966; Anon., *Biol. Abstr.* 47 (21): S.28 & S.166. 1966; Hellyer, *Shrubs in Colour* 20--[21]. 1966; Moldenke, *Phytologia* 14: 218--256. 1967; *Wayside Gardens* [Cat.] 1967: 140 & 224. 1967; Mellinger, *Castanea* 31: 311. 1967; Van Steenis-Kruseman, *Fl. Males. Bull.* 4: L. 1967.

The Makino & Tanaka (1927) reference cited above is sometimes cited as "Fl. Jap. fig. 187. 1928", but the publication is not so listed by Walker in his classic *Bibliography of Eastern Asiatic Botany* (1960).

## CALLICARPA ACUMINATA H.B.K.

Additional bibliography: Moldenke, *Phytologia* 14: 219. 1967.

Barr describes this plant as a "shrub with bright-green foliage", fruiting in October; King reports it as "not common" in Oaxaca, growing in loam in open sun. The corollas are described as "white" on R. M. King 900 and as "cream-white" on King, Guevara, & Forero-G. 6018. There is a wood voucher accompanying the last-mentioned collection.

Additional citations: MEXICO: Oaxaca: R. M. King 900 (Mi).

Vera Cruz: R. J. Barr 63-537 [W. E. Niles 265] (Du--506323). GUATEMALA: Alta Verapaz: R. M. King 3354 (Du--445340). COLOMBIA: Tolima: King, Guevara, & Forero-G. 6018 (W--2466996).

## CALLICARPA AMERICANA L.

Additional bibliography: L. H. Bailey, *Man. Cult. Pl.*, ed. 1, pr. 1, 633 & 804 (1924), pr. 2, 633 & 804 (1925), pr. 3, 633 & 804 (1938), pr. 4, 633 & 804 (1941), pr. 5, 633 & 804 (1944), and ed. 2, 844 & 1045. 1949; H. L. Hoffman, *Castanea* 29: 31. 1964; E. E. Lord, *Shrubs & Trees Austral. Gard.*, rev. ed., 250. 1964; J. E. Moore, *Castanea* 30: 26. 1965; Rodgers & Shake, *Castanea* 30: 163. 1965; Reese & Thieret, *Castanea* 31: 253 & 274. 1966; Mellinger, *Castanea* 31: 311. 1967; Moldenke, *Phytologia* 14: 219--220 & 255. 1967.

Duncan describes this plant as 8 feet tall, with a broad rounded crown, the corolla pink-purple, and the anthers yellow, growing in generally open areas beneath dense live oak woods. Rodgers & Shake (1965) report the species as "occasional near streams" in Transylvania County, North Carolina, and Oconee County, South Carolina; Mellinger (1967) describes it as an associate of Pinckneya pubens in Effingham County, Georgia; while Reese & Thieret (1966) report it from the Five Islands in Iberia and Saint Mary Parishes, Louisiana, where it grows with Ilex vomitoria as the conspicuous understory in woods of Carya species, Magnolia grandiflora, and Quercus virginiana on relatively well-drained flat to sloping forested areas. Lord (1964) records it as cultivated in Australia.

Additional citations: GEORGIA: Sapelo Island: W. H. Duncan 20155 (S). FLORIDA: Monroe Co.: A. R. Moldenke 1387 (Rf). LOUISIANA: Evangeline Par.: Ewan 19342 (Rf). TEXAS: Cass Co.: Harris & Roach 249 (Du--355203).

## CALLICARPA AMERICANA var. LACTEA F. J. Muller

Additional synonymy: Callicarpa americana f. alba Ewan, in herb.

Additional bibliography: L. H. Bailey, *Man. Cult. Pl.*, ed. 1, pr. 1, 633 (1924), pr. 2, 633 (1925), pr. 3, 633 (1938), pr. 4, 633 (1941), pr. 5, 633 (1944), and ed. 2, 844 & 1045. 1949; Moldenke, *Phytologia* 13: 470 & 494--497. 1966.

Ewan describes the fruit of the variety as "snow-white" and reports the plant growing with the usual form near St. Landry, about

one mile northeast of Chilcot State Park, collected on September 13, 1958.

Additional citations: LOUISIANA: Evangeline Par.: Ewan 19360 (Z).

CALLICARPA ANGUSTA Schau.

Additional bibliography: Moldenke, Phytologia 14: 220 & 225 (1967) and 15: 17 & 19. 1967.

This plant has been collected in anthesis in February, July to October, and in December, and in fruit from December to March. Material has been misidentified and distributed in herbaria under the name C. canna L. On the other hand, the Ahern 811 [25] and Loher 4444, distributed as C. angusta, are actually C. bicolor A. L. Juss., Ahern 662 is C. formosana Rolfe, and Foxworthy s.n. [Herb. Philip. Bur. Sci. 719] is C. rivularis Merr. The Kollman s.n. [Java, 1838], previously referred to typical C. longifolia Lam., is actually C. longifolia f. floccosa Schau. The E. D. Merrill 441, cited below, was previously incorrectly cited by me as C. erioclona Schau.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Culi6n: E. D. Merrill 441 (N, W--435411). Luzon: Ahern's collector s.n. [Herb. Philip. Forest. Bur. 1888] (W--625970); M. Ramos s.n. [Herb. Philip. Bur. Sci. 1030] (W--626451), s.n. [Herb. Philip. Bur. Sci. 7724] (W--629299); Ramos & Edafo s.n. [Herb. Philip. Bur. Sci. 26367] (W--1375174); Reillo s.n. [Herb. Philip. Bur. Sci. 19265] (W--900601). Mindoro: Merritt s.n. [Herb. Philip. Forest. Bur. 8788] (W--709166).

CALLICARPA ANOMALA Ridl.

Additional bibliography: Moldenke, Phytologia 13: 501. 1966.

The identity of this plant has now been established. The name is a synonym of Geunsia anomala Ridl. The taxon is to be excluded from Callicarpa.

CALLICARPA ARBOREA Roxb.

Additional bibliography: Rolla, Bull. Bot. Surv. India 5: 188 & 205. 1963; Balakrishnan, Bull. Bot. Surv. India 6: 87. 1964; Panigrahi, Chowdhury, Raju, & Deka, Bull. Bot. Surv. India 6: 239 & 255. 1964; Mukerjee, Bull. Bot. Surv. India 7: 135. 1965; Rao & Joseph, Bull. Bot. Surv. India 7: 139 & 149. 1965; Sen & Naskar, Bull. Bot. Surv. India 7: 38. 1965; Moldenke, Phytologia 14: 220, 235, 243, 245, & 246. 1967.

Boeea found this plant growing in marsh land and swamp forest in Sumatra. Mukerjee (1965) states that C. arborea, along with Maca-ranga denticulata Muell.-Arg. and Trema orientalis Wall., are the most invasive trees on the savannas of the Jalpaiguri district of West Bengal. Rao & Joseph (1965) tell us that it is found in the tropical and subtropical evergreen forests of Hopea, Terminalia, and Dipterocarpus in the Northeast Frontier Agency of India. Rolla

(1963) reports that C. arborea grows in the subtropical 900--1800 m. association with Phoebe, Castanopsis, and Lagerstroemia. Panigrahi and his associated authors (1964) record it from Orissa. The corollas are described as "lavender-pink" on M. S. Clemens 10788.

Material of C. arborea has been misidentified and distributed in herbaria under the name C. magna Schau.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Mindanao: M. S. Clemens 1156 (W--709630). Paragua: E. D. Merrill 801 (W--435771). INDONESIA: GREATER SUNDA ISLANDS: Sumatra: H. H. Bartlett 6448 (Mi, W--1551599); Bartlett & LaRue 361 (W--1053957); Boeea 8244 (Mi); Krukoff 349 (W--1702650); Toroos 1045 (Mi), 3646 (W--1675892), 4364 (W--1676350). MELANESIA: NEW GUINEA: Northeastern New Guinea: M. S. Clemens 10788 (Mi), 10870 P (Mi).

CALLICARPA ARBOREA var. PSILOCALYX (H. J. Lam) Moldenke

Additional bibliography: Moldenke, *Phytologia* 14: 37 & 40--42 (1966) and 14: 220. 1967.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon: H. M. Curran s.n. [Herb. Philip. Forest. Bur. 17181] (W--709916); Elmer 9125 (W--705119), 17575 (W--1237180); M. Ramos 395 (W--1178293); Sulit s.n. [Philip. Nat. Herb. 37503] (W--2376635).

CALLICARPA BASILANENSIS Merr.

Additional bibliography: Moldenke, *Phytologia* 14: 44--45. 1966.

This plant has been found growing in pasture land, flowering in May and August. Santos reports the trunk as 5 inches in diameter, the calyx as "light green, yellow", and the corolla as "light-purple".

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Basilan: W. I. Hutchinson s.n. [Herb. Philip. Forest. Bur. 6124] (W--706277--cotype); Reillo s.n. [Herb. Philip. Bur. Sci. 15450] (W--714884); J. V. Santos 4172 (W--2246049). Mindanao: Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 36737] (W--1260153); C. B. Robinson s.n. [Herb. Philip. Bur. Sci. 11831] (W--714485).

CALLICARPA BASITRUNCATA Merr.

Additional bibliography: E. H. Walker, *Bibliog. East. Asiat. Bot. Suppl.* 1: 235. 1960; Moldenke, *Phytologia* 14: 45--46. 1966.

CALLICARPA BICOLOR A. L. Juss.

Additional bibliography: Moldenke, *Phytologia* 14: 220 & 225 (1967) and 15: 15 & 19. 1967.

Rogerson describes this plant as a shrub or small tree, 6--10 feet tall. It has been found in anthesis in April, June, and July in addition to the months previously reported, and in fruit

in June. The corollas are described as "lilac" on C. T. Rogerson 1016. Material has been misidentified and distributed in herbaria as C. angusta Schau. and as C. erioclona Schau. The Ahern's collector s.n. [Herb. Philip. Forest. Bur. 1484], Elmer 18086, R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 1241], and Robinson & Merritt s.n. [Herb. Philip. Bur. Sci. 6124], cited below, were previously incorrectly cited by me as C. erioclona Schau. On the other hand, the Bermejós s.n. [Herb. Philip. Bur. Sci. 1534], distributed as C. bicolor, is actually the type collection of var. bermejosi Moldenke.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Bohol: R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 1241] (N, W-439220), Cebu: J. V. Barrow s.n. [Cebu, 1904] (W-628538). Luzon: Ahern 811 (W-445880); Ahern's collector s.n. [Herb. Philip. Forest. Bur. 1484] (Bz-17264, N, W-625934); Elmer 18086 (Bz-17460, Ca-270774, N, Ut-67298, W-1237553); Loher 4444 (W-446885); E. D. Merrill 2715 (W-437683), 3442 (W-438424); Robinson & Merritt s.n. [Herb. Philip. Bur. Sci. 6124] (N, W-627638); C. T. Rogerson 1016 (W-1940693). Mindanao: DeVore & Hoover 175 (W-449406). Negros: E. D. Merrill 207 (W-1133075).

#### CALLICARPA BICOLOR var. BERMEJOSI Moldenke

Bibliography: Moldenke, *Phytologia* 14: 398--399. 1967.

This variety differs from the typical form of the species in having its leaf-blades oblong-lanceolate or oblong, 13--18 cm. long, 3--5 cm. wide, conspicuously long-acuminate at both ends, and subentire or obscurely sinuate-crenate along the margins.

The type of the variety was collected by J. Bermejós — in whose honor it was named — at Bulalacao, Mindoro, Philippine Islands, in August or September, 1906, and is deposited in the United States National Herbarium at Washington. The plant has been found in fruit in September, and herbarium material has been misidentified and distributed in herbaria under the name C. cana L.

Citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Coron: M. Ramos s.n. [Herb. Philip. Bur. Sci. 41148] (W-1261818). Mindoro: Bermejós s.n. [Herb. Philip. Bur. Sci. 1534] (N—isotype, W-439473—type, Z—isotype).

#### CALLICARPA BICOLOR var. SUBINTEGRIFOLIA Moldenke

Bibliography: Moldenke, *Phytologia* 14: 399. 1967.

This variety differs from the typical form of the species in having the margins of its leaf-blades entire or subentire.

The type of the variety was collected by Jacinto Ramos at Pangil, in Laguna Province, Luzon, Philippine Islands, on May 27, 1959, and is deposited in the United States National Herbarium at Washington. It was originally misidentified and distributed in herbaria as C. formosana Rolfe.

Citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon:

J. Ramos s.n. [Philip. Nat. Herb. 39880] (W-2376580--type, Z--isotype).

CALLICARPA BODINIERI Léveillé

Additional synonymy: Callicarpa bodineiri Lord, Shrubs & Trees Austral. Gard., rev. ed., 250, sphalm. 1964.

Additional bibliography: L. H. Bailey, Man. Cult. Pl., ed. 2, 844 & 1045. 1949; E. E. Lord, Shrubs & Trees Austral. Gard., rev. ed., 250. 1964; Hellyer, Shrubs in Colour 20--[21]. 1966; Moldenke, Phytologia 14: 220--221, 225, & 255. 1967; Wayside Gardens [Cat.] 1967: 140. 1967.

The R. C. Ching 5666 and How 71071 cited by me in Phytologia 14: 60 (1966) are actually C. japonica var. angustata Rehd. (as stated by me on the preceding page of that paper). The MacDaniels s.n. [West Hill, Ithaca, July 10, 1940], Rehder s.n. [E. H. Wilson 633] & s.n. [Arnold Arb., Aug. 8, 1919], and Sears s.n. [Arnold Arb. 6712-1-A], distributed originally as C. bodinieri var. giraldii, are actually C. japonica var. angustata Rehd. The Fang 4648, cited below, was previously incorrectly cited by me as var. giraldii (Hesse) Rehd.

Additional citations: CHINA: Szechuan: Fang 4648 (Du--252638).

CALLICARPA BODINIERI var. GIRALDII (Hesse) Rehd.

Additional synonymy: Callicarpa bodineiri giraldii Lord, Shrubs & Trees Austral. Gard., rev. ed., 250, sphalm. 1964.

Additional bibliography: Hand.-Mazz., Ann. Hort. Gothenb. 9: [67], 1934; L. H. Bailey, Man. Cult. Pl., ed. 2, 844 & 1045. 1949; E. E. Lord, Shrubs & Trees Austral. Gard., rev. ed., 250. 1964; Hellyer, Shrubs in Colour 20--[21]. 1966; La Montagne, Bull. Soc. Nat. Hort. France 1966: 381. 1966; Moldenke, Phytologia 14: 220--221, 225, & 255. 1967; Wayside Gardens [Cat.] 1967: 140. 1967.

Additional illustrations: Hellyer, Shrubs in Colour 20 & [21]. 1966; Wayside Gardens [Cat.] 1967: 140 [in color]. 1967.

In the Wayside Gardens reference cited above (1967) this plant is described as follows: "Gracefully recurving branches, covered in August with thousands of closely set, small, pink tinted flowers. These are followed in late September by masses of violet-purple berries which last until midwinter. There are few shrubs which give as much pleasure in the garden or which are so satisfactory for cutting. Ultimate height about five feet. We offer nice plants about 18 to 24 inches tall that will bear fruit at once" for \$3.25 each, \$9.25 for three, or \$33.50 per dozen. It is called "Violet Jewel Berry". Lord (1964) records it as cultivated in Australia.

The Fang 4648 cited by me in a previous installment of these notes is better regarded as typical C. bodinieri Léveillé.

CALLICARPA BODINIERI var. LYI (Léveillé) Rehd.

Additional bibliography: Moldenke, Phytologia 14: 51 & 60--61.

1966.

CALLICARPA BODINIERI var. ROSTHORNII (Diels) Rehd.Additional bibliography: Moldenke, Phytologia 14: 62. 1966.The Ching 5666, distributed as this variety, is actually C. japonica var. angustata Rehd.CALLICARPA BREVIPES (Benth.) HanceAdditional bibliography: Moldenke, Phytologia 14: 221 & 255. 1967.The Weiss 1705, distributed as this species, is actually C. japonica var. angustata Rehd.CALLICARPA BREVIPETIOLATA Merr.Additional bibliography: Moldenke, Phytologia 14: 221. 1967.In addition to the months previously recorded, this plant has been found in fruit in June. Boeea records the additional vernacular names "doehoet poene", "mata poene", "si marmata-ni-poene", and "si marpoene-poene". The note appended by someone on the H. H. Bartlett 7408 & 7527 specimens in the University of Michigan herbarium, to the effect that the scientific name of the species was "ined." in 1966, is entirely incorrect. The name was validly published by Merrill in 1919.Additional citations: INDONESIA: GREATER SUNDA ISLANDS: Sumatra: H. H. Bartlett 7408 (M1, W--1429475), 7441 (M1), 7527 (M1, W--1429527); Boeea 7402 (M1, W--1682102), 7592 (M1), 7752 (M1), 8017 (M1), 9002 (M1); Toroos 1220 (M1); H. S. Yates 1563 (W--1551289).CALLICARPA CANDICANS (Burm. f.) Hochr.Additional synonymy: Callicarpa canna L., in herb.Additional & emended bibliography: C. B. Clarke in J. Schmidt, Bot. Tidsskr. 26: 171--172. 1904; Sen & Naskar, Bull. Bot. Surv. India 7: 38. 1965; Kawazu & Mitsui, Tetrahedron Lett. 30: 3519--3524. 1966; J. S. Beard, Descrip. Cat. W. Austr. Pl. 91. 1966; Anon., Biol. Abstr. 47 (21): S.28. 1966; Moldenke, Phytologia 14: 221, 225, 238, 244, & 245 (1967) and 15: 15. 1967.Kawazu & Mitsui (1966) report on the extraction of a fish-killing compound, callicarpone, from this plant. An additional vernacular name for the plant reported by Hasskarl (1844) is "katoempang", a name applied also to C. longifolia Lam. and to C. pedunculata R. Br.The E. D. Merrill 441, distributed as C. candicans, is actually C. angusta Schau.; Ahern's collector s.n. [Herb. Philip. Bur. Sci. 1484], DeVore & Hoover 175, R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 1241], Robinson & Merritt s.n. [Herb. Philip. Bur. Sci. 6124], and C. T. Rogerson 1016 are C. bicolor A. L. Juss.; M. Ramos s.n. [Herb. Philip. Bur. Sci. 41148] is C. bicolor var. bermejosi Moldenke; Fénix s.n. [Herb. Philip. Bur. Sci. 29884], Loher 4443,

H. N. Whitford 569, and Wilkes s.n. [Manilla] are C. erioclona Schau.; C. C. Y. Wong 326 is C. erioclona f. glabrescens Moldenke [not var. paucinervia as stated previously]; Kanehira 2203, G. C. Moore 339, W. L. Necker R.24, and Rodin 599 are C. erioclona var. paucinervia (Merr.) Moldenke; and Bañaga s.n. [Philip. Nat. Herb. 33393] is C. formosana Rolfe.

CALLICARPA CANDICANS var. SUMATRANA (Miq.) Moldenke

Additional bibliography: C. B. Clarke in J. Schmidt, Bot. Tidskr. 26: 171—172. 1904; Moldenke, Phytologia 14: 221. 1967.

CALLICARPA CAUDATA Maxim.

Additional bibliography: Moldenke, Phytologia 14: 221—222 & 228—230. 1967.

Williams refers to the fruit of this plant as bluish-purple. It has been found flowering also in February and fruiting in May and October.

The Elmer 10375 and E. D. Merrill 7115, distributed as C. caudata, are actually C. merrillii Moldenke, a species to which this one is very closely related.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Benguet: Loher 4440 (W—446882). Luzon: P. T. Barnes s.n. [Herb. Philip. Forest. Bur. 924] (W—625102); Canicosa s.n. [Herb. Philip. Forest. Bur. 30020] (W—1527566); Elmer 5784 (W—853014), 5870 (W—853090), 8646 (W—854684); E. D. Merrill 4613 (W—710373); M. Ramos s.n. [Herb. Philip. Bur. Sci. 27044] (W—1376040); Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 37481] (W—1292135), s.n. [Herb. Philip. Bur. Sci. 38025] (W—1292209), s.n. [Herb. Philip. Bur. Sci. 40505] (W—1261518); R. S. Williams 1060 (W—707363). Mindanao: Elmer 11333 (W—779529).

CALLICARPA CAULIFLORA Merr.

Additional bibliography: Moldenke, Phytologia 14: 144—145 (1966) and 14: 247. 1967.

This species has been collected in fruit in December.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Leyte: M. Ramos s.n. [Herb. Philip. Bur. Sci. 41540] (W—1261993).

CALLICARPA CRASSINERVIS Urb.

Additional bibliography: Moldenke, Phytologia 14: 222 & 232. 1967.

CALLICARPA CUNEIFOLIA Britton & P. Wils.

Additional bibliography: Moldenke, Phytologia 14: 222 & 232. 1967.

CALLICARPA DICHOTOMA (Lour.) K. Koch

Additional bibliography: Hayata, Journ. Coll. Sci. Univ. Tokyo



30 (1): [Mater. Fl. Formos.] 222. 1911; L. H. Bailey, Man. Cult. Pl., ed. 1, pr. 1, 633 & 804 (1924) and pr. 2, 633 & 804. 1925; Hand.-Mazz., Ann. Hort. Gothenb. 9: [67]. 1934; L. H. Bailey, Man. Cult. Pl., ed. 1, pr. 3, 633 & 804 (1938), pr. 4, 633 & 804 (1941), pr. 5, 633 & 804 (1944), and ed. 2, 844 & 1045. 1949; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: 1203, pl. 1011. 1962; E. E. Lord, Shrubs & Trees, Austral. Gard., rev. ed., 250. 1964; Hellyer, Shrubs in Colour 20. 1966; Moldenke, Phytologia 14: 222, 223, 225, 249, & 254—256. 1967.

Additional illustrations: Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: pl. 1011. 1962.

Liu (1962) recommends the common name "purple beauty-berry" for this species. Mizushima describes the plant as a bush, 2 m. tall, the branches of the year and the young leaves tinged with violet, growing in swamps. Lord (1964) records the species as cultivated in Australia, with "deep-lilac berries".

The R. C. Ching 6130, distributed as C. dichotoma, is actually C. japonica f. albiflora Moldenke, while I. R. Jones 637-25 is C. japonica var. angustata Rehd. and Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 49011] cited by Bakhuizen van den Brink is actually C. phanerophlebia Merr.

Additional citations: JAPAN: Honshiu: Mizushima 17216 (S).

CULTIVATED: New Jersey: H. N. Moldenke s.n. [Somerset, 1930] (Bu).

#### CALLICARPA DOLICHOPHYLLA Merr.

Additional bibliography: Moldenke, Phytologia 14: 170—172. 1966.

This species has been found flowering in May and July.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon: M. Ramos s.n. [Herb. Philip. Bur. Sci. 1063] (W—626482), s.n. [Herb. Philip. Bur. Sci. 8268] (W—629417).

#### CALLICARPA ELEGANS Hayek

Additional synonymy: Callicarpa elegans Hagek., in herb.

Callicarpa elegans Hayek, in herb.

Additional bibliography: Hayata, Journ. Coll. Sci. Univ. Tokyo 30 (1): [Mater. Fl. Formos.] 222. 1911; Moldenke, Phytologia 14: 222, 225, & 255. 1967.

This plant has been found flowering also in June and fruiting in August; the flowers on R. S. Williams 340 are described as "pinkish-white". Hayek's surname is sometimes misspelled "Hagek.", "Hayak.", or "Hayet." in herbaria. Merrill suggests that the Herb. Philip. Bur. Sci. 29137 collection, cited below, represents a "var." of this species, but I can see no essential distinguishing characters.

The Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 456114], cited below, was originally misidentified and distributed to herbaria as C. micrantha Vidal, cited by Bakhuizen van den Brink as C. pedunculata R. Br., and previously cited by me as C. formosana var. glabrescens Moldenke.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Leyte: Edafo s.n. [Herb. Philip. Bur. Sci. 41674] (W--1262068). Luzon: Loher 4446 (W--446886); Merritt & Darling s.n. [Herb. Philip. Forest. Bur. 13994] (W--711492); Otanés s.n. [Herb. Philip. Bur. Sci. 17792] (W--1238526), s.n. [Herb. Philip. Bur. Sci. 17851] (W--1010580); M. Ramos s.n. [Herb. Philip. Bur. Sci. 4815] (W--626250), s.n. [Herb. Philip. Bur. Sci. 7054] (W--629148), s.n. [Herb. Philip. Bur. Sci. 22310] (W--898402), s.n. [Herb. Philip. Bur. Sci. 27662] (W--1376039), s.n. [Herb. Philip. Bur. Sci. 33146] (W--1263282); Ramos & Edafo s.n. [Herb. Philip. Bur. Sci. 29137] (W--1376037), s.n. [Herb. Philip. Bur. Sci. 45614] (Bz--18140, N); R. S. Williams 340 (W--706954). Mindanao: Ramos & Edafo s.n. [Herb. Philip. Bur. Sci. 49011] (W--1527938). Sibuyan: Elmer 12144 (W--779777). PALAU ISLANDS: Koror: Herre 53 (Du--337163), 66 (Du--337156), Makarakol: Hosokawa 9273 (W--2036568). MICRONESIA: CAROLINE ISLANDS: Auluptagel: Hosokawa 7454 (W--2036371). Corol: Kanehira 1995 (W--1656935).

#### CALLICARPA ERIOCLONA Schau.

Additional synonymy: Callicarpa eriocloma Schau., in herb.

Additional bibliography: Moldenke, Phytologia 14: 175--184 (1966), 14: 222, 241, & 243--245 (1967), and 15: 15, 17, & 20. 1967.

Foxworthy describes this plant as a tree, 5 m. tall, the trunk 7 cm. in diameter at breast height, the leaves silvery beneath, and the (immature) fruit pale-green. Herre describes it as a low shrub. The corollas are described as "nearly white" on R. S. Williams 2964 and as "pink" on Herre 17 and M. L. Steiner 418. The species has been found in flower in January; the fruit is described as purplish. Foxworthy found it growing in "forest valley", while Lambert & Brunson aver that it is "not commercial".

The Ahern's collector s.n. [Herb. Philip. Forest. Bur. 1484], Robinson & Merritt s.n. [Herb. Philip. Bur. Sci. 6124], Elmer 18086, and R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 1241] previously cited by me as C. erioclona are actually C. bicolor A. L. Juss.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Bohol: M. Ramos s.n. [Herb. Philip. Bur. Sci. 42770] (W--1292438). Catanduanes: Ramos & Edafo s.n. [Herb. Philip. Bur. Sci. 75120] (W--1596218). Luzon: Adduru 150 (W--898632); Ahern's collector s.n. [Herb. Philip. Forest. Bur. 3300] (W--1178548); T. E. Borden s.n. [Herb. Philip. Forest. Bur. 1595] (W--625480); Elmer 15082 (W--894518), 15124 (W--894255), 17598 (W--1237198); Fénix s.n. [Herb. Philip. Bur. Sci. 29884] (W--1376036); Foxworthy 13 (W--1091588), 18 (W--1091601); Galutera s.n. [Philip. Nat. Herb. 33358] (W--2212413); Kruckeberg & Brown s.n. [August 24, 1945] (Du--454091); Loher 4443 (W--446884), 4449 (W--446887);

R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 22910] (W--898251); E. D. Merrill 2536 (W--437495); M. Ramos s.n. [Herb. Philip. Bur. Sci. 1039] (W--525459), s.n. [Herb. Philip. Bur. Sci. 8176] (W--629392); Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 26417] (W--1264942); M. L. Steiner 418 (W--2376453); H. N. Whitford 487 (W--851635), 569 (W--851679), s.n. [Herb. Philip. Forest. Bur. 19757] (W--900111); Wilkes s.n. [Manilla] (W--40651). MINDANAO: Ahern 540 (W--445820); Elmer 11190 (W--779478); Quadras 335 (W--1584708); R. S. Williams 2964 (W--708188). MINDORO: Lambert & Brunson 69 (W--1862388); E. D. Merrill 1667 (W--436618), 2245 (W--437194). PALAU ISLANDS: Koror: Herre 17 (Du--336915). INDONESIA: GREATER SUNDA ISLANDS: Banguey: Castro & Melegrito 1714 (W--1349684). Celebes: C. B. Robinson 2465 (W--775429). MICRONESIA: CAROLINE ISLANDS: Ponape: Takamatsu 796 [U. S. Geol. Surv. Pollen Coll. 1870] (W--1992671).

*CALLICARPA ERIOCLONA* f. *GLABRESCENS* Moldenke

Additional bibliography: Moldenke, *Phytologia* 14: 181--182 (1966) and 15: 20. 1967.

The C. C. Y. Wong 326 collection, cited below, was previously cited by me as *C. erioclona* var. *paucinervia*, but it seems to me now that it is closer to f. *glabrescens* in its characters.

Additional citations: MICRONESIA: CAROLINE ISLANDS: Truk: Hosokawa 8398 (W--2036496--isotype). Yap: C. C. Y. Wong 326 (W--2092186, Z).

*CALLICARPA ERIOCLONA* var. *PAUCINERVIA* (Merr.) Moldenke

Additional bibliography: Moldenke, *Phytologia* 14: 222 (1967) and 15: 20. 1967.

Rodin describes the flowers of this plant as borne "in small cymes". Bryan found it growing "on sandy flat at foot of limestone cliff under coconut palms". It has been found flowering also in March, and fruiting in July. The corollas on E. H. Bryan Jr. 1142 are described as "pale-lavender" and the fruit as blackish-purple. Fosberg regards this taxon as *C. candicans* (Burm. f.) Hochr. and has so annotated numerous specimens.

The Kanehira 2203 specimen, cited below, was originally misidentified and distributed in herbaria as *Premna gaudichaudii* Schau. On the other hand, the C. C. Y. Wong 326, previously cited by me as *C. erioclona* var. *paucinervia*, is probably better placed as f. *glabrescens* Moldenke.

Additional citations: WESTERN PACIFIC ISLANDS: MARIANA ISLANDS: Guam: E. H. Bryan Jr. 1142 (W--1967418); G. C. Moore 339 (W--1863367); R. V. Moran 4525 (W--2276422); Rodin 599 (W--1968596). Pagan: Kanehira 2203 (W--1967170). Rota: W. L. Necker R.24 (W--1864096).

## CALLICARPA FERRUGINEA Sw.

Additional bibliography: Moldenke, *Phytologia* 14: 222 & 231—233. 1967.

## CALLICARPA FLOCCOSA Urb.

Additional bibliography: Moldenke, *Phytologia* 14: 187 (1966) and 14: 233. 1967.

## CALLICARPA FORMOSANA Rolfe

Additional synonymy: *Callicarpa formosanum* Moldenke apud E. H. Walker, *Bibliog. East. Asiat. Bot. Suppl.* 1: 235, sphalm. 1960.

Additional bibliography: J. Matsum., *Bot. Mag. Tokyo* 13: 114. 1899; E. H. Walker, *Bibliog. East. Asiat. Bot. Suppl.* 1: 235. 1960; Liu, *Illustr. Nat. & Introd. Lign. Pl. Taiwan* 2: 1204, pl. 1012. 1962; Moldenke, *Phytologia* 14: 220—231 (1967) and 15: 15, 17, & 20. 1967.

Additional illustrations: Liu, *Illustr. Nat. & Introd. Lign. Pl. Taiwan* 2: pl. 1012. 1962.

Recent collectors refer to this plant as a slender bush, with medicinal uses [in Luzon], inhabiting uplands, and called "tigao-tigao". The corollas are described as "lilac" on R. S. Williams 115 and "purple" on J. V. Santos 5239. It has been found fruiting also in January. Liu (1962) recommends the common name "Formosan beauty-berry" for the species. Merrill, in a memorandum appended to a sheet of his Sp. Blanc. 637, says "This species is common and widely distributed in the Philippines at low altitudes, and is abundant in the vicinity of Manila where it is locally known as tubang dalag, one of the native names cited by Blanco [for his C. americana]. The name is from tuba (Croton tiglium) and dalag (a mud fish), for the plant has properties similar to those of Croton tiglium in that it is used for stupifying fish. *Callicarpa blancoi* presents considerable variation."

The J. Ramos s.n. [Philip. Nat. Herb. 39880], distributed as C. formosana, is actually the type collection of C. bicolor var. subintegrifolia Moldenke; D. R. Mendoza 1433 [Philip. Nat. Herb. 18495] and Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 29051] are C. formosana f. angustata Moldenke; Escritor s.n. [Herb. Philip. Bur. Sci. 21155] is the type collection of C. formosana f. parvifolia Moldenke

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Bayas: E. B. Copeland 123 (W—850282). Biliran: R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 18597] (W—1238619). Bohol: R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 1239] (W—439218); M. Ramos s.n. [Herb. Philip. Bur. Sci. 42808] (W—1292451). Dinagat: Ramos & Pascasio s.n. [Herb. Philip. Bur. Sci. 35239] (W—1263930). Leyte: Kruckeberg & Brown s.n. [September 9, 1945] (Du—454037). Luzon: Adduru 30 (W—1091722); Amihan 3 [Philip. Nat. Herb. 33376] (W—2212432, W—2212433);

Baflaga s.n. [Herb. Philip. Nat. Herb. 33393] (W--2212448); P. T. Barnes s.n. [Herb. Philip. Forest. Bur. 55] (W--626129); H. M. Curran s.n. [Herb. Philip. Forest. Bur. 5140] (W--708615); Elmer 5629 (W--852878), 14352 (W--894517), 17611 (W--1237206); Escritor s.n. [Herb. Philip. Bur. Sci. 21104] (W--900819); Foxworthy s.n. [Herb. Philip. Bur. Sci. 12235] (W--714171); Lete 252 (W--1264306); Loher 4441 (W--446883); E. D. Merrill 145 (W--435145), 2522 (W--437480), 2688 (W--437655); R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 19792] (W--568387); R. Meyer s.n. [Herb. Philip. Forest. Bur. 2520] (W--852439); Ocampo s.n. [Herb. Philip. Bur. Sci. 27980] (W--1376379); Otanés s.n. [Herb. Philip. Bur. Sci. 17903] (W--1050776); M. Ramos s.n. [Herb. Philip. Bur. Sci. 8132] (W--629373), s.n. [Herb. Philip. Bur. Sci. 21755] (W--568590), s.n. [Herb. Philip. Bur. Sci. 27610] (W--1293798), s.n. [Merrill Sp. Blanc. 637] (W--904314); Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 29306] (W--1294732); H. N. Whitford 404 (W--851588); R. S. Williams 115 (W--706817). Masbate: E. D. Merrill 3375 (W--438356). Mindanao: Ahern 662 (W--445407, W--445842); DeVore & Hoover 106 (W--449610); Elmer 10985 (W--779440), 13441 (W--1172253); Fénix s.n. [Herb. Philip. Bur. Sci. 26058] (W--1293799); C. M. Weber 1055 (W--712281). Mindoro: Mangubat s.n. [Herb. Philip. Bur. Sci. 937] (W--439745); R. C. McGregor 113 (W--854911); E. D. Merrill 1214 (W--436184); J. V. Santos 5239 (W--2246533). Samar: M. Ramos s.n. [Herb. Philip. Bur. Sci. 17427] (W--424949).

CALLICARPA FORMOSANA f. ALBIFLORA Yamamoto

Additional bibliography: Moldenke, Phytologia 14: 225 & 227--228. 1967.

CALLICARPA FORMOSANA f. ANGUSTATA Moldenke

Additional synonymy: Callicarpa formosana f. angustata Moldenke apud E. H. Walker, Bibliog. East. Asiat. Bot. Suppl. 1: 235, sphalm. 1960.

Additional bibliography: E. H. Walker, Bibliog. East. Asiat. Bot. Suppl. 1: 235. 1960; Moldenke, Phytologia 14: 222, 225, 228--229, & 231 (1967) and 15: 24. 1967.

The corollas are described as "pink" on D. R. Mendoza 1433 and the plant has been found growing in rocky creeks, at 1060 meters altitude, flowering in May, and with green fruits in the same month. The plant has the appearance of a natural hybrid between C. formosana Rolfe and C. stenophylla Merr.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon: D. R. Mendoza 143 [Herb. Philip. Nat. Herb. 18495] (W--2214778); Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 29051] (W--1292845).

## CALLICARPA FORMOSANA var. CHINENSIS P'ei

Additional bibliography: Moldenke, *Phytologia* 14: 225 & 229. 1967.

## CALLICARPA FORMOSANA var. GLABRESCENS Moldenke

Additional bibliography: Moldenke, *Phytologia* 14: 225 & 229--230 (1967) and 15: 21. 1967.

This plant has been collected in anthesis in February.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon: Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 47223] (W--1527827).

## CALLICARPA FORMOSANA var. LONGIFOLIA Suzuki

Additional bibliography: Moldenke, *Phytologia* 14: 228 & 230--231. 1967.

## CALLICARPA FORMOSANA f. PARVIFOLIA Moldenke

Bibliography: Moldenke, *Phytologia* 14: 399 (1967) and 15: 24. 1967.

This form differs from the typical form of the species in having its mature leaf-blades (on fruiting specimens) uniformly only 1--3 cm. long and 7--15 mm. wide.

The type of the form was collected by L. Escritor at Palanan Bay, in the province of Isabela, Luzon, Philippine Islands, in June, 1913, and is deposited in the United States National Herbarium at Washington.

Citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon: Escritor s.n. [Herb. Philip. Bur. Sci. 21155] (W--900843--type, Z--isotype).

## CALLICARPA FULVA A. Rich.

Additional bibliography: A. S. Hitchc., *Ann. Rep. Mo. Bot. Gard.* 4: 118. 1893; Moldenke, *Phytologia* 14: 222, 231--234, 238, & 241. 1967.

## CALLICARPA GRISEBACHII Urb.

Additional bibliography: Moldenke, *Phytologia* 14: 232 & 238--239. 1967.

## CALLICARPA HAVILANDII (King &amp; Gamble) H. J. Lam

Additional synonymy: Callicarpa havilandii King & Gamble, in herb.

Additional bibliography: Moldenke, *Phytologia* 14: 239--241. 1967.

Additional citations: INDONESIA: GREATER SUNDA ISLANDS: Sarawak: Native collector 525 (W--1173985).

## CALLICARPA HITCHCOCKII Millsp.

Additional bibliography: Moldenke, *Phytologia* 14: 232 & 241. 1967.

CALLICARPA INTEGERRIMA Champ.

Additional bibliography: Moldenke, Phytologia 14: 220 & 243—246. 1967.

CALLICARPA JAPONICA Thunb.

Additional bibliography: Hayata, Journ. Coll. Sci. Univ. Tokyo 30 (1): 222. 1911; L. H. Bailey, Man. Cult. Pl., ed. 1, pr. 1, 633 & 804 (1924) and pr. 2, 633 & 804. 1925; Makino & Tanaka, Man. Fl. Nipp. fig. 187. 1927; Terasaki, Nippon Shokubutsu Zufu [Jap. Bot. Illustr. Album] fig. 1592. 1933; Tu, Chinese Bot. Dict., abrdgd. ed., 310. 1933; L. H. Bailey, Man. Cult. Pl., ed. 1, pr. 3, 633 & 804. 1938; Makino, Ill. Fl. Nippon fig. 560. 1940; L. H. Bailey, Man. Cult. Pl., ed. 1, pr. 4, 633 & 804 (1941), pr. 5, 633 & 804 (1944), and ed. 2, 844 & 1045. 1949; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: 1205, pl. 1013. 1962; E. E. Lord, Shrubs & Trees Austral. Gard., rev. ed., 250. 1964; Hellyer, Shrubs in Colour 20. 1966; Moldenke, Phytologia 14: 220—223, 225, & 249—256 (1967) and 15: 18. 1967.

Additional illustrations: Makino & Tanaka, Man. Fl. Nipp. fig. 187. 1927; Terasaki, Nippon Shokubutsu Zufu [Jap. Bot. Illustr. Album] fig. 1592. 1933; Makino, Ill. Fl. Nippon fig. 560. 1940; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: 1205, pl. 1013. 1962.

Siebold & Zuccarini (1846) say "524. C. Japonica Thunb. Fl. jap. p. 60 et Auct. (excl. Synon. C. longifoliae Lam.) Folia petiolata petiolo 4—9" longo, lamina utrinque longe attenuata acuminata, basi et apice integerrima utrinque serrata ceterum lanceolata, ovata vel ovato-rhombea, glabra, subtus glandulis monutis globosis, citrinis dense adspersa, 3—5" longa, 1—2" lata. Cymae axillares dichotomo-ramosissimae multiflorae, petiolum duplo superantes. Calyx urceolatus truncatus obsolete quadridentatus, uti pedunculi pilis stellatis adspersus. Corolla extus papilloso-pubescent, quadrifida. Stamina exserta; antherae obovato-oblongae, basi emarginatae, vertice truncatae, loculis apice poro obliquo dehiscentibus connectivo glandulis seriatis citrinis obsito.....527. C. Murasaki Sieb. Annuaire de la Soc. hortic. l. c. p. 25. C. mimurasaki Hasskarl hort. Bogor. p. 136. Ausser dieser und C. japonica erwähnt Hasskarl a. a. O. noch der C. acuminata H.B.K. und C. cuspidata Roxb. als aus Japan nach Java eingeführt. Mich allein die japanischen, sondern alle Arten von Callicarpa deren wir über 20 untersuchten, haben das Connectiv der Antheren dicht mit goldgelben Drüsen besetzt. Aehnliche Drüsen stehen auch immer auf der Rückseite der Blätter und werden nur häufig durch den filzigen Ueberzug (von Sternhaaren) verdeckt."

Hasskarl (1844) reports the Japanese vernacular name "mimurazaki" for this plant as cultivated at Buitenzorg, Java. Miquel (1865) -- whose reference is misdated "1866" by Nakai (1923) -- goes to considerable length in discussing the relationship between C. japonica Thunb. and C. longifolia Lam.: "Speci-

minum numerosorum examine manifesto constat hanc cum C. longifoliae formis glabratis coniungi non posse. Multis numeris C. americanae affinior est, nec longe a stirpe iaponica distare videtur C. rhynchophylla Miq. Fl. Ind. bat. II. p. 888. - Nostra iaponica a C. longifolia discernitur glabritie in adultis fere perfecta, glandulis citrinis illis in foliorum pagina inferiore et haud raro in inflorescentia calyce corollaque obviis maioribus magis scutellaeformibus et squamis orbiculato-concaviusculis teneris membranosis quam glandulae multoties maioribus iis licet perraro in foliis subtus intermixtis, foliis multo brevius saepe brevissime petiolatis, semper fere latis, haud raro rhombeo-lato-ovalibus, basi cuneata et acumine perspicue integerrimis, caeterum vulgo grossius serratis, firmioribus, floribus maioribus, Thunbergio teste albis (nec rubellis), corolla extus adeo papillosa ut tomento tenui obducta videatur (nec vario grado pilosula), baccis maioribus rubris (nec albis). - Innovationes pube stellata minuta densa vulgo grisea gilvulaque obductae citius glabrescentes, ita ut folia adulta fere glabra vel prorsus glabra sint; in pagina superiore praeter minutissimas et raras glandulas citrinas et aliquot pilos stellatos sub lente in iunioribus pilos exiles simplices iuvenies quos in C. longifolia nunquam vidi. Folia adulta chartacea, subtus perspicue pallidiora, 6 circiter utrinque costulis tenuiter distanterque transverse venosis pertonsa, petiolis brevibus (1-- $\frac{1}{4}$  vulgo 2 circiter, rarissime 6 lin. longis) suffulta, forma diversa in diversis speciminibus, ita v. c.; mox lato-elliptica vel e basi acuta elliptica acuminata praeter basin et acumen modice crenato-dentata 4-fere 6 poll. longa  $1\frac{3}{3}$  --  $2\frac{1}{2}$  lata, mox vero latiora basi que minus acuta, grossius et obtusius dentata brevius acuminata rugosiora sunt, costulis utrinque ad 9 (supremis tamen valde tenuibus) pertensa, passim marginibus sub-sinuata; mox folia abbreviata rhombeo-dilatata praesertim superne grossius dentata vel subserrata, 3 --  $1\frac{1}{2}$  poll. longa, a medio deorsum cuneata, acumine abrupto orto, perraro elongatiora et angustiora iis C. longifoliae quodammodo similiora inveniuntur. - Prostat etiam parvifolia, sequenti quodammodo similis, sed inflorescentia toto discernenda. - Pedunculi nunc exacte axillares, nunc vero paullo supra-axillares, quo casu vulgo gemma foliigena concomitans, tenues semipollicares vel breviores, iteratim dichotomi, cymam nunc contractiorem nunc vero laxiorem sistentes, sed vulgo tamen contractam e longinquo umbelliformem, cum floribus extus glandulis citrinis lucidis adpersam; in fructu cymae passim laxae 4--5es dichotomae,  $1\frac{1}{2}$  poll. altae et latae, bracteis subulatis minutis persistentibus. Calyx semigloboso-obconicus 4-costulatus, e margine truncato obsolete 4-denticulatus,  $1\frac{1}{2}$  lin. longus. Corolla 'alba' campanulato-infundibuliformis, lobis ovatis obtusis tubo fere duplo brevioribus,  $1\frac{1}{3}$  lin. circiter longa. Filamenta alte exserta, antheris ellipticis, loculis basi acuta discretis, connectivo dorso lato dense glanduloso. Stylus apice sensim capitellato-incrasatus. Baccae calyce cupuliformi indiviso vel lobato suffultes,



laeves, subsiccaae. - Variis locis v. c. prope Nangasaki, Iun. et Iul. fl.; SIEBOLD, BUERGER; in regionibus montanis sylvaticis prope pagum Susokatogi ins. Nippon, in declivibus montium Sata Foge, prope oppidum Kifura Sawa eiusdem insulae, ad radicem montis Takawo Foge insulae Kiusiu: PIEROT; prope Nangasaki: TEXTOR. - Jama Mura Saki vel Mura Saki vel Mi Mura Saki iap. - Porro in ZOLLING. pl. iap. Goering. sub n. 349."

Hottes (1942) says "Callicarpa japonica....has larger berries and leaves [than C. dichotoma] (2 1/2 to 5 inches long). The leaves are toothed even at the base. There are fewer berries than in the previous mentioned sort [C. dichotoma]...The Beauty-berries produce attractive leaves and the shrubs are quite graceful though upright. In planting them, give a rather protected place. Although the fruits are tiny, they are attractive upon the plant for garden effect. When the fruit is cut and placed in vases, it displays its true charm. Soil. Circumneutral pH 6.0-8.0. Pruning. Prune back the plants severely each Spring as the flowers and fruits are borne on new wood. Objections. The winterkilling of much of the top growth necessitates annual pruning. The berries are covered by the leaves so that they are not as showy as they should be. Propagation. 1. Cuttings of half-ripe wood are generally used. Give a little bottom heat and humid conditions. Some cover cuttings with a belljar. Protect in frames for Winter or bring into greenhouse. 2. Layers. 3. Seed sown indoors in Fall. 4. Hardwood cuttings would only be successful when they do not freeze."

Van Melle (1943), in discussing C. japonica and C. dichotoma, says that these "are small shrubs, normally about 5 to 7 feet high, not perfectly -- i.e., not reliably -- hardy in our zone and likely to be killed back at least partly; a matter which does not interfere greatly with their usefulness since they flower and fruit on growth of the current season and may be treated as die-backs. In that case they will grow little more than 3 to 4 feet high. Their one, but considerable, contribution to the border is the effect of their attractive, small, clustered, lilac berries strung along the branches, ripening in the Autumn and remaining effective for a long time. These are sufficient reason to endure their rather uninteresting foliage and insignificant small flowers. Of the two, C. japonica is the more erect-growing, with darker, long-tapering leaves to 6 inches long....Both are unpretentious as to soil and succeed in sun or shade. They are worth planting in a small way for the sake of their pretty berries, which are among the most decorative of autumn effects."

Bean (1951) differentiates the commonly cultivated beautyberries in England as follows:

1. Leaves glabrous beneath (or nearly so), glandular.
2. Leaves 3--5 inches long, toothed in the central part.....  
C. japonica
- 2a. Leaves 1 1/2 -- 3 1/2 inches long, coarsely toothed in the apical part.....C. dichotoma

1a. Leaves downy beneath.

3. Leaves only slightly downy beneath, 2--5 inches long.....  
C. shirasawana

3a. Leaves distinctly downy beneath.

4. Leaves densely downy beneath.

5. Leaves 4--6 inches long.....C. rubella

5a. Leaves 2--4 1/2 inches long.....C. mollis

4a. Leaves moderately downy beneath.

6. Leaves 3--5 1/2 inches long; flower-clusters nearly sessile.....C. americana

6a. Leaves 2--5 inches long; flower-clusters stalked.....  
C. bodinieri var. giraldii

In my own 1954 work on the cultivated species of the genus in California, the following key is offered:

1. Leaf-blades densely covered beneath with golden-yellow, closely appressed, circular or elliptic, concave scales.....  
C. longifolia

1a. Leaf-blades without scales beneath.

2. Cymes very large and spreading, to 20 cm. long and 17 cm. wide, usually densely flowered; fruit white.....  
C. macrophylla

2a. Cymes small, usually only about 1--5 cm. long and wide, densely or loosely flowered; fruit lilac or violet.

3. Leaves small and numerous, their blades usually about 2--6.5 cm. long and 1--2.3 cm. wide, toothed only above the middle, glabrous or subglabrate beneath.....  
C. dichotoma

3a. Leaves larger, usually not crowded.

4. Leaf-blades usually stellate-tomentose beneath, usually very coarsely and more or less irregularly toothed along the margins with spreading teeth; peduncles as long as or shorter than the petioles, 3--10 mm. long; calyx-rim subtruncate, 4-apiculate, or very shortly triangulate-toothed.....C. americana

4a. Leaf-blades glabrous or sparingly pubescent beneath, more regularly serrate with more or less appressed antrorse teeth; peduncles longer than the petioles, 5--25 mm. long; calyx-rim conspicuously 4-toothed or 4-lobed with broad round teeth.

5. Leaf-blades oblong or oblong-elliptic, 6--12 cm. long, 1.5--6.2 cm. wide.....C. japonica

5a. Leaf-blades ovate-elliptic or ovate, 10--18 cm. long, 4.5--10 cm. wide.....C. japonica var. luxurians

L1 (1965) comments that C. japonica "is widely distributed in Korea and Japan, where it is a common deciduous shrub of the hills. It flowers in August and fruits in October through November". He also says concerning its occurrence on Formosa "Calli-carpa japonica, widely distributed in China and Japan, is not recorded by Kanehira. P'ei.....considers C. dichotoma and C. japonica very difficult to separate from each other. Undoubtedly the

concept of C. dichotoma of most Japanese authors on the Taiwan flora includes also C. japonica. Masamune.....besides his C. japonica var. kotoensis (Hayata) Masamune.....considers C. japonica as present in Taiwan in the following forms: C. japonica var. luxurians Rehder, C. japonica f. kuruninsularis Masamune, and C. japonica var. angustata Rehder." His key for distinguishing C. japonica from the other commonly cultivated species of the genus is reproduced by me under C. bodinieri in the present series of notes (Phytologia 14: 53. 1966). Liu (1962) recommends the common name "Japanese beauty-berry" for this species. Lord (1964) tells us that it is a lime-loving plant and is cultivated in Australia.

Backer & Bakhuizen van den Brink (1965) describe the species as it occurs in Java as follows: "Exclusively cultivated. Drupe in Java always violet-red; cymes on 1/6 -- 2 cm long peduncles, 1--5 cm across; calyx minutely dentate or subtruncate, glabrous, 3/4 -- 1 1/4 mm high; corolla white or pink-lilac, 2--4 mm high; lobes glabrous; stamens 3--5 mm; style 3--5 mm. Young branches stellate-hairy; leaves elliptic-obovate-oblong, rarely subrhomboid, often rather abruptly long-acuminate, usually rather coarsely serrate-crenate, gland-dotted beneath, on both surfaces (excl. the upper surface of the larger leaves) soon becoming glabrous, 3--15 cm by 1 1/2 -- 7 cm; petioles 1/5 -- 1 1/2 cm. Shrub, 0.50--2.00; I--XII; native to Japan; in Java cultivated as an ornamental. Variable."

The Makino & Tanaka (1927) reference in the bibliography above is sometimes cited as "Fl. Jap. 1928", but is not so listed by Walker in his Bibliography of Eastern Asiatic Botany (1960). The "Nakai, Veg. Isl. Wangto" reference sometimes cited (e.g., Nakai, Fl. Sylv. Koreana 14: 30. 1923) appears to refer to Nakai, Saishu-to Narab. Kwan-to Shokub. Hokok. (Fl. Saishu & Kwan Isls.) (1914). According to my friend, Egbert H. Walker, "The name 'wangto' has been identified as the same as Quelpaert Island. To is Chinese for island and is often also used in Japan instead of shima or jima. Nakai wrote a report all in Japanese on the vegetation of Quelpaert Isl. off the coast of Korea. It is Nakai, 1914a on p. 343 in the Merrill & Walker Bibliography (1938)."

Material of C. japonica has been widely misidentified and distributed in herbaria under the names C. bodinieri var. giraldi (Hesse) Rehd., C. dichotoma (Lour.) K. Koch, C. dichotoma Raensch., C. gracilis Sieb. & Zucc., C. japonica var. angustata Rehd., C. japonica var. luxurians Rehd., C. koreana Hort., C. mollis Sieb. & Zucc., and even Viburnum sp.

On the other hand, the Chiao 1046, Herb. Univ. Nanking 14345, and Yin 102, distributed as C. japonica, are actually C. bodinieri Léveillé; Y. Chen 736 [Herb. Univ. Nanking 15086], Cheo & Wilson 107 & s.n. [Herb. Univ. Nanking 12753], Chiao 1022 & s.n. [Herb. Univ. Nanking 14321 & 18896], Chung & Sun 204, A. Henry 5992, Hu

1621, Ling 2565 [Herb. Univ. Nanking 12515], McClintock s.n. [Nov. 16, 1959], E. D. Merrill 11298, and Sun 1176 & 1260 are C. bodinieri var. giraldii (Hesse) Rehd.; Chiao 2617, Coville s.n. [Garden of Whitman Cross, Chevy Chase, Oct. 29, 1926], Hiroe 12141, Hu 1634, In-Cho's collector 9904, and Liou 1660 are C. dichotoma (Lour.) K. Koch; Chiao 828 & 14128, Duss s.n., and Herb. Univ. Nanking 14128 are C. formosana Rolfe; Alling s.n. [Hondo, 1892], Chiao 1612, Chung & Sun 176 & 406, A. Henry s.n. [Prov. Hainan], Ip s.n. [Herb. Univ. Nanking 1402], Lau 4409, A. N. Stewart s.n. [Herb. Univ. Nanking 2426], and E. H. Wilson 8729, 9405, & 10548 are all C. japonica var. angustata Rehd.; Maximowicz s.n. [Hakodate, 1861] (in part) and Numata 36 are C. japonica var. luxurians Rehd.; Chiao 2617, Field & Low 21w, Mrs. R. K. Smith s.n. [8-10-1937] & s.n. [8-20-1938], E. H. Wilson 9262 & 10411, and Yongsok 9049 are C. japonica var. rhombifolia H. J. Lam; and A. Forbes 21 is C. pedunculata R. Br. Zimmermann 210 is in part C. japonica var. angustata and in part var. rhombifolia.

It is very probable that the A. N. Stewart s.n. [Herb. Univ. Nanking 2426], cited below, is actually var. angustata Rehd. Miquel (1870) cites from Japan 6 specimens collected by Berger, one by Maximowicz, one by Mohnike, two by Oldham, 8 by Siebold, one by Textor, and one by Charles Wright. Forbes & Hemsley (1890) cite Carles s.n. [Soul mountains] from Korea, Oldham 622 from the "Corsan Archipelago", and C. Wright s.n. from the Kyukiu Archipelago, deposited in the herbaria at Kew and the British Museum. Matsumura (1899) cites J. Matsumura s.n. and Tashiro s.n. from Okinawa and Tanaka 308 from Yaeyama. P'ei (1932) cites only Zimmermann 210 from Shantung, China, En 2505 from Fukien, and Tai 11793 from Siongsai Island. The Univ. Calif. Bot. Gard. 38.533-S1 collection, cited below, was grown from seed sent from Kornik, Poland.

In all, 202 herbarium specimens and 6 mounted photographs have been examined by me.

Additional & emended citations: NORTH CAROLINA: Durham Co.: Harrar & Blomquist s.n. [rocky ground north of H.W. 751, 10/23/39] (H--55572). CHINA: Anhwei: Sun 1176 (N), 1260 (N). Chekiang: Chiao s.n. [Herb. Univ. Nanking 18896] (N, N, Ws); E. D. Merrill 11298 (N). Fukien: En 2505 (Ca--322208, N). Kiangsi: Chung & Sun 176 (N), 204 (N), 406 (N), 506 (N). Kwangtung: Tsui 601, in part (Ca--612427). Shansi: H. Smith 6166 (Go, S). Szechuan: C. L. Chow 4969 (W--1990594); W. K. Hu 8783 (W--1191002); Yin 102 (N). KOREA: T. H. Chung 5603 (M1); Faurie 734 (Du--14018); In-Cho 1096 (M1), 3331 (M1); In-Cho's collector 8486 (M1), 8537 (M1), 8540 (M1), 9517 (M1), 9541 (M1); Tae-Hyon 1094 (M1); K. Uno 23240 (Ba), 23240a (N); E. H. Wilson 10411 (W--1054233); Yongsok 6770 (M1),

6811 (Mi), 6896 (Mi), 7134 (Mi), 7135 (Mi), 7179 (Mi), 10048 (Mi).  
 KOREAN COASTAL ISLANDS: Kangwha: In-Cho 3442 (Mi). Quelpart:  
 Faurie 1893 (V--126); Yongsok 8753 (Mi). Ullung: In-Cho 3246  
 (Mi); Yongsok 2410 (Mi), 2446 (Mi). WESTERN PACIFIC ISLANDS: JA-  
 PAN: Hiradosima: Weiss 1128 (Bz--17651). Hokkaido: Baker & Baker  
 s.n. [Muroran, July 31, 1914] (Gg--31982, Gg--31983); Kitamura s.  
 n. [31 Jul. 1953] (Ws); Maximowicz s.n. [Hakodate, 1861] (Bz--  
 17648, C, T). Honshiu: Baker & Baker s.n. [Misaki, June 9, 1914]  
 (Gg--31987), s.n. [Miyogi, 8-11-14] (Gg--31988); Collector unde-  
 termined 361 (W--9967), s.n. [Musashi, Nakano, 10 Juli 1910] (W--  
 1133076); Dahlstrand s.n. [4/8/1954] (Go); Dorsett & Morse 787  
 (N, W--1553407), 1448 (W--1553607); Furuse s.n. [3 July 1957] (S);  
 Herb. Mus. Bot. Stockh. s.n. [Musasi, 14/10/1910] (S); Herb. Sci.  
 Coll. Imp. Univ. s.n. [Uzen, July 20, 1887] (Vt); Herb. Umbach  
 20804 (Ws); Hiroe 7706 (Ca--82126), 13906 (Ws); Hurusawa 14-A (W--  
 2073723); Y. Kimura 14-B (W--2037868); Kinashi s.n. [13-VI.1922]  
 (Mi), s.n. (Mi); Kobayashi 14142 (S), 14172 (S), 16253 (S); Koyama  
 s.n. [July 22, 1956] (Mg); Kusaka s.n. [July 24, 1934] (Go);  
 Lindquist s.n. [30/9/1952] (Go); Lindquist & Nitzelius s.n. [3/9/  
 1952] (Go), s.n. [5/9/1952] (Go); Y. Matsumura 1671 (N), 3788 (N),  
 6594 (N); Mizushima 208 (S); C. S. Sargent s.n. [Miyanoshita,  
 August 25, 1892] (W--9969); Savatier 919 (Ph, W--9968, W--484077);  
 Sawada 2298 (S), s.n. [Hakone, Sakokura, 17.VII.1926] (S); C.  
 Skottsberg s.n. [Hondo, 27/10/1926] (Go); Suzuki UC.403 [Herb. Su-  
 zuki 398036] (Ca--928687), UC.699 [Herb. Suzuki 433014] (Ca--  
 930463); Tagawa 287 (Ws), 3283 (Ws); Tagawa & Iwatsuki 1726 (Ws,  
 Ws); Tamaki s.n. [Senda, 10/7/1911] (Vi); Tanaka & Hiroe 8872  
 (Ws); Tobe 15367 (S); Weiss 1488 (Bz--17649), 1814 (Bz--17653);  
 E. H. Wilson 7048 (W--778269), 7560 (W--778409); Yatch s.n. [July  
 4, 1955] (Vi). Kiushiu: Hurusawa 14-I (W--2073722); Masamune s.  
 n. [Satsuma, June 27, 1923] (N); Oldham 620 (S), 621 (M); T. Tan-  
 aka 121 [Herb. Tanaka 100161] (Ca--252183); Weiss 289 (Bz--17652),  
 701 (Bz--17650). Shikoku: Collector undetermined s.n. [Nanokawa,  
 Tosa, June 21, 1892] (W--206172); Hurusawa 3696 (Vi); Tokui s.n.  
 [Iyo, Aug. 1953] (Vi). Yezo: Maries s.n. (Pa). Island undeter-  
 mined: Baker & Baker 162 (Sd--19477); Blume s.n. (T); Burger s.n.  
 [Japonia] (Ca--918430); Faurie 3215 (K); Hogg s.n. (C); J. Matsu-  
 mura s.n. [June 1879] (W--147600); Oldham s.n. [Japan] (S); Sie-  
 bold s.n. (M, N). RYUKYU ISLAND ARCHIPELAGO: Okinawan Islands:  
 Okinawa: Conover 1140 (W--1993179). Sakishima Islands: Ikema: F.  
 R. Fosberg 38546 (Z). Iriomote: Kanehira 3182 (N). Miyako: F.  
 R. Fosberg 38180 (Sm), 38315 (Sm). Ogami: F. R. Fosberg 38407  
 (Sm). Island undetermined: Gressitt 532 (S). FORMOSA: Yamamoto,  
 Omuma, & Outi s.n. [Agincort, August 15, 1933] (W--2063387). PALAU

ISLANDS: Palao: Takamatsu 1273 (Bi, Bi), 1635 (Bi), 1792 (Bi).  
 MICRONESIA: CAROLINE ISLANDS: Auluptagel: Takamatsu 1472 (Bi, Ca-805721). CULTIVATED: Austria: Herb. Bot. Inst. Univ. Wien s.n. [4.VI.1915] (Vu), s.n. [9.VIII.1923] (Vu). California: Eastwood s.n. [Landsdale, Oct. 1920] (Gg--31989); E. C. Marquand s.n. [July 10, 1935] (N); Univ. Calif. Bot. Gard. 38.533-S1 (Mi); Walther s.n. [Golden Gate Park, Nov. 1920] (Gg--31990); Wells, Lammererts, & McClintock s.n. [June 6, 1944] (N). Connecticut: Jansson s.n. [Oct. 9, 1937] (Go), s.n. [Oct. 12, 1957] (Go). Cuba: Acuffa & Roig 18967 (Es). England: Nicholson 2976 (Ed). Germany: Borrmüller s.n. [Züschen] (B); Herb. Bot. Spath Berlin s.n. [27/10/34] (N); Hülphers s.n. [H. B. Berol. 1906] (S); Mildbraed s.n. [23 Juli 1947] (B); R. Schlechter s.n. [9.I.1925] (B). Japan: Takenchi 14-C (W--2037869). Java: Couperus 93 (Ol). Massachusetts: Blazic s.n. [Arnold Arb., June 1922] (Po--125339); R. B. Clark s.n. [Arnold Arb. 874-32] (Ms), s.n. [Arnold Arb. 12397b] (Ms), s.n. [Arnold Arb. 12938\*a] (Ms); Herb. Arnold Arb. 1089-4 (Gg--31984); Kidder s.n. [31 Aug. 1925] (Oa--10747); Rehder s.n. [Herb. Arnold Arb. 1084-4] (Ur), s.n. [Arnold Arb., Aug. 22, 1898] (B, Ur), s.n. [Arnold Arb., Oct. 31, 1898] (Mi--photo), s.n. [Arnold Arb., Oct. 7, 1921] (Ur); R. E. Torrey s.n. [Amherst, June 21, 1947] (Ms); A. P. Wyman s.n. [Herb. Arnold Arb. 1089-1] (Io--34567, Io--34568), s.n. [Arnold Arb., Aug. 23, 1901] (Ur). Missouri: D. B. Dunn 14111 (Lb--51529). New York: Hartling s.n. [N. Y. Bot. Gard. Cult. Pl. 1036] (N), s.n. [N. Y. Bot. Gard. Cult. Pl. 03575] (N); H. N. Moldenke 5048 (N), 10821 (N); Teuscher 1063 (Mg), 1064 (Mg), 1065 (Mg), s.n. ["C. dichotoma"] (N), s.n. ["C. dichotoma var. koreana"] (N), s.n. ["C. shirasawana"] (N); R. S. Williams s.n. [N. Y. Bot. Gard. Cult. Pl. 1036] (N).

CALLICARPA JAPONICA f. ALBIBACCA Hara, Enum. Sperm. Jap. 1: 183. 1948.

Synonymy: Callicarpa japonica var.  $\beta$  C. leucocarpa Sieb., Jaarb. Konink. Nederl. Maatsch. Tuinb. [Ann. Hort. Pays-Bas] 1845: 71, pl. 5. 1845. Callicarpa japonica var. leucocarpa Sieb. ex Rehd. in L. H. Bailey, Stand. Cycl. Hort. 2: 628. 1914. Callicarpa japonica var. leucocarpa Nakai, Trees & Shrubs Indig. Jap., ed. 1, 336. 1922. Callicarpa japonica f. leucocarpa (Sieb.) Rehd., Bibl. Cult. Trees 584. 1949. Callicarpa japonica leucocarpa Bean in Chittenden, Roy. Hort. Soc. Dict. Gard. 1: 359. 1951. Callicarpa japonica leucocarpa Aul., N. Y. Herald Trib. Spec. Gard. Sect. 7, April 5. 1964; Moldenke, Résumé Suppl. 10: 5, in syn. 1964.

Bibliography: Sieb., Jaarb. Konink. Nederl. Maatsch. Tuinb. [Ann. Hort. Pays-Bas] 1845: 71, pl. 5. 1845; Rehd. in L. H. Bailey,

Stand. Cycl. Hort. 2: 628. 1914; L. H. Bailey, Man. Cult. Pl., ed. 1, pr. 1, 633 (1924) and pr. 2, 633. 1925; Rehd., Man. Cult. Trees, ed. 1, 776. 1927; Nakai, Trees & Shrubs Indig. Jap., ed. 2, 453. 1927; L. H. & E. Z. Bailey, Hortus 111. 1930; Moldenke in Fedde, Repert. Spec. Nov. 39: 304 (1936) and 40: 120. 1936; L. H. Bailey, Man. Cult. Pl., ed. 1, pr. 3, 633. 1938; Moldenke, Geogr. Distrib. Avicenn. 36. 1939; Rehd., Man. Cult. Trees, ed. 2, pr. 1, 804 & 932. 1940; Moldenke, Prelim. Alph. List Invalid Names 11. 1940; L. H. Bailey, Man. Cult. Pl., ed. 1, pr. 4, 633. 1941; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 58, 71, & 87. 1942; Moldenke, Alph. List Invalid Names 9. 1942; L. H. Bailey, Man. Cult. Pl., ed. 1, pr. 5, 633. 1944; Rehd., Man. Cult. Trees, ed. 2, pr. 2, 804 & 932. 1947; Hara, Enum. Sperm. Jap. 1: 183. 1948; Rehd., Bibl. Cult. Trees 584. 1949; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 133, 157, & 177. 1949; L. H. Bailey, Man. Cult. Pl., ed. 2, 844 & 1045. 1949; Moldenke, Phytologia 3: 295 & 296. 1950; W. J. Bean in Chittenden, Roy. Hort. Soc. Dict. Gard. 1: 359. 1951; Moldenke, Résumé 172, 213, 244, & 444. 1959; Rehd., Man. Cult. Trees, ed. 2, pr. 9, 804 & 932. 1960; Li, Morris Arb. Bull. 14: 6. 1963; Aul, N. Y. Herald Trib. Spec. Gard. Sect. 7, April 5. 1964; Moldenke, Résumé Suppl. 10: 5. 1964; G. Grimm, N. Y. Herald Trib. Sect. 2, 20, February 6. 1966; Moldenke, Phytologia 14: 254. 1967; Wayside Gardens [Cat.] 1967: 140. 1967.

Illustrations: Sieb., Jaarb. Konink. Nederl. Maatsch. Tuinb. [Ann. Hort. Pays-Bas] 1845: pl. 5 [in color]. 1845; Aul, N. Y. Herald Trib. Spec. Gard. Sect. 7, April 5. 1964; G. Grimm, N. Y. Herald Trib. Sect. 2, 20, February 6. 1966; Wayside Gardens [Cat.] 1967: 140 [in color]. 1967.

This form differs from the typical form of the species in having white flowers and white fruit.

The form was introduced into cultivation in 1845. It is known as "white jewel berry" or "white jewel-berry". In previous publications I adopted the designation var. leucocarpa Sieb. for it. However, if the taxon is to be given form rank, then Hara's name is the valid one for it under the present International Rules.

It is offered to the horticultural trade by the Gulf Stream Nursery, Wachapreague, Virginia, and Wayside Gardens, Mentor, Ohio. Only Grimm (1966) and Wayside Gardens (1967) report the flowers as well as the fruit as white, but this seems very probable since it holds true for some other white-fruited forms in this genus. Siebold (1845) maintains that it differs from the typical form also in its fuscous branchlets and merely acuminate (not caudate) leaf-blades. Considering the great variability of the species in regard to the size and shape of the leaf-blades, it is very probable (as indicated by Rehder and other recent authors) that the fruit color is the only reliable way to identify it. As yet I have seen no material of this form.

Wayside Gardens (1967) describe this plant as follows: "A delightful, erect, bushy-growing shrub about 4 to 5 feet high.... covered in late July with thousands of close-set, small white flowers. These are followed in late September by masses of small

white berries. Very showy....ideal to use with the purple form for fall arrangements", selling at \$3.25 each, three for \$9.25, and \$33.50 per dozen.

*CALLICARPA JAPONICA* f. *ALBIFLORA* Moldenke, *Phytologia* 13: 242. 1966.

Bibliography: Moldenke, *Phytologia* 13: 242. 1966; Moldenke, *Résumé Suppl.* 14: 4. 1966.

This form differs from the typical form of the species only in having white corollas.

The type of the form was collected by Ernest Henry Wilson (no. 10444) at Kongo-san, in the province of Kogen, Korea, at 330 meters altitude, on July 5, 1918, and is deposited in the United States National Herbarium at Washington. The collector notes that he saw only one bush of this form. Walker and his associates describe it as a shrub. It should be noted here that the corollas are said to be white also on *C. japonica* f. *albibacca* Hara, but in that form the fruits are also white, while in the present one they are the normal purple. Material has been misidentified and distributed in herbaria as *C. dichotoma* (Lour.) K. Koch.

Three specimens, including the type, have been examined by me.

Citations: CHINA: Kwangsi: R. C. Ching 6130 (N). KOREA: E. H. Wilson 10444 (W--1052230--type). WESTERN PACIFIC ISLANDS: RYUKYU ISLAND ARCHIPELAGO: Okinawan Islands: Okinawa: Sonohara s.n. [Walker, Sonohara, Tawada, & Amano 6354] (N).

*CALLICARPA JAPONICA* f. *ALBIFRUCTA* Hara, *Enum. Sperm. Jap.* 1: 184 [as "*albifructus*"]. 1948; Moldenke, *Phytologia* 3: 295. 1950.

Synonymy: *Callicarpa japonica* var. *luxurians* f. *leucocarpa* Nakai, *Trees & Shrubs Indig. Jap.*, ed. 2, 455. 1927.

Bibliography: Nakai, *Trees & Shrubs Indig. Jap.*, ed. 2, 455. 1927; Hara, *Enum. Sperm. Jap.* 1: 184. 1948; Moldenke, *Phytologia* 3: 295 (1950) and 4: 451. 1953; Moldenke, *Résumé* 172, 181, 243, 244, & 444. 1959; Moldenke, *Résumé Suppl.* 3: 19. 1962; Moldenke, *Phytologia* 14: 254. 1967.

This form differs from the typical form of the species in having the large leaves of var. *luxurians* and also white fruit.

Suzuki describes this as a very rare shrub in forests, at 50 meters altitude, fruiting in January, and called "8-shiroshikibu". Only a single specimen has been seen and examined by me.

Citations: WESTERN PACIFIC ISLANDS: NANPO ISLANDS: Hachijo: Suzuki 25 [Herb. Suzuki 391073] (Ca--793438).

*CALLICARPA JAPONICA* var. *ANGUSTATA* Rehd. in C. S. Sarg., *Pl. Wils.* 3: 369. 1916.

Additional & emended synonymy: *Callicarpa japonica angustifolia* Kwa-wi [trans. Savatier], *Arbor.* 1: pl. 15. 1759; Stapf, *Icon. Bot. Ind. Lond.* 1: 526. 1929. *Callicarpa japonica* f. *angustifolia* Miq., *Cat. Mus. Bot. Lugd.-Bat.* 70, nom. nud. 1870. *Callicarpa*



longifolia Hemsl. apud Rehd. in C. S. Sarg., Pl. Wils. 3: 369, in syn. (in part). 1916 [not C. longifolia Auct., 1965, nor Benth., 1966, nor Blume, 1936, nor Diels, 1916, nor Hance, 1932, nor Hook., 1932, nor L., 1820, nor Lam., 1783, nor Roxb., 1827, nor Vahl, 1936, nor "sensu Li", 1966, nor "sensu Mori", 1963]. Callicarpa caudatifolia Koidz., Bot. Mag. Tokyo 39: 8. 1925. Callicarpa longifolia sensu Hemsl. apud Rehd., Bibl. Cult. Trees 584, in syn. (in part). 1949. Callicarpa japonica angustata Mattoon, Pl. Buyers Guide, ed. 6, 83. 1958; Moldenke, Résumé Suppl. 7: 7, in syn. 1963. Callicarpa japonica f. angustata (Rehd.) Ohwi ex Moldenke, Résumé Suppl. 5: 6, in syn. 1962. Callicarpa japonica f. angustata (Rehd.) Mizushima, in herb.

Bibliography: Kwa-wi [trans. Savatier], Arbor. 1: pl. 15. 1759; Lam., Encycl. Méth. Bot. 1: 563. 1783; Lam., Tabl. Encycl. Méth. [Illustr. Gen.] 1: 293, pl. 69, fig. 2. 1791; Miq., Cat. Mus. Bot. Lugd.-Bat. 70. 1870; Forbes & Hemsl., Journ. Linn. Soc. Lond. Bot. 26 [Ind. Fl. Sin. 2]: 253. 1890; Diels in Engl., Bot. Jahrb. 29: 548. 1900; Rehd. in C. S. Sarg., Pl. Wils. 3: 366 & 369. 1916; Chung, Mem. Sci. Soc. China 1 (1): 226. 1924; Koidz., Bot. Mag. Tokyo 39: 8. 1925; Nakai, Trees & Shrubs Indig. Jap., ed. 2, 455--456, fig. [216]. 1927; Rehd., Man. Cult. Trees, ed. 1, 776. 1927; A. W. Hill, Ind. Kew. Suppl. 7: 36. 1929; Stapf, Icon. Bot. Ind. Lond. 1: 526. 1929; P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 17, 31, 52, & 55--56, pl. 7. 1932; Moldenke in Fedde, Repert. Spec. Nov. 39: 304 (1936) and 40: 98, 120, 124, 125, 128, & 131. 1936; Moldenke, Geogr. Distrib. Avicenn. 36. 1939; Moldenke, Prelim. Alph. List Invalid Names 11. 1940; Worsdell, Ind. Lond. Suppl. 1: 160. 1941; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 56, 58, 71, 86, & 87. 1942; Moldenke, Alph. List Cit. 1: 7, 13, 101, 102, & 275. 1946; Moldenke, Bol. Soc. Venez. Cienc. Nat. 11: 49. 1947; Hara, Enum. Sperm. Jap. 1: 184. 1948; Moldenke, Alph. List Cit. 2: 514, 563, & 594 (1948), 3: 697, 847, 895, 918, & 947 (1949), and 4: 1136. 1949; L. H. Bailey, Man. Cult. Pl., ed. 2, 844 & 1045. 1949; Rehd., Bibl. Cult. Trees 584. 1949; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 130, 133, 157, & 177. 1949; W. J. Bean in Chittenden, Roy. Hort. Soc. Dict. Gard. 1: 359. 1951; Moldenke, Phytologia 4: 75. 1952; Mattoon, Pl. Buyers Guide, ed. 6, 83. 1958; Moldenke, Résumé 168, 172, 173, 213, 242, 244, & 444. 1959; Krüssmann, Handb. Laubgeh. 1: 255. 1959; Rehd., Man. Cult. Trees, ed. 2, pr. 9, 804 & 932. 1960; Moldenke, Résumé Suppl. 3: 18 & 30 (1962), 5: 6 (1962), and 7: 7. 1963; Li, Woody Pl. Taiwan 822--823 & 944. 1963; Li, Morris Arb. Bull. 14: 6. 1963; Moldenke, Résumé Suppl. 14: 3, 4, & 7. 1966; Moldenke, Phytologia 14: 54, 58, 59, 62, 99, 102, 142, 163, 164, & 167 (1966), 14: 228--230 & 254 (1967), and 15: 18, 19, 21, 31, & 32. 1967.

Illustrations: Kwa-wi [trans. Savatier], Arbor. 1: pl. 15. 1759; Nakai, Trees & Shrubs Indig. Jap., ed. 2, 456, fig. [216]. 1927; P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] pl. 7. 1932.

This variety differs from the typical form of the species in having narrower leaf-blades, which are oblong-lanceolate or oblanceolate, rarely elliptic-lanceolate, 5--12 cm. long, and only 1.2--3.5 cm. wide.

The type of the variety was collected by Ernest Henry Wilson (no. 2195) in thickets at 1500 meters altitude, Hsing-shan Hsien, Hupeh, China, in July, 1907, and is deposited in the Arnold Arboretum Herbarium at Cambridge, Massachusetts. Rehder (1916) says: "This variety seems to differ from the type only in its narrower leaves and might be considered a mere form of C. japonica if it did not occupy a different geographical area. From narrow-leaved glabrescent forms of C. Giraldiana it is easily distinguished by the oblong anthers opening by a pore at the apex, and by the smaller long-stalked inflorescence. It has little relation to the true C. longifolia Lamarck.....which is a southern species and has according to Lamarck's description and figure narrow-lanceolate glabrous leaves about 25 cm. long and a longer-stalked larger inflorescence." In his 1927 work Rehder maintains that the variety is limited to central China and that it was introduced into cultivation in 1907. Actually, this taxon seems to be found naturally in central, eastern, and southern China, as well as in Korea, Japan, Hongkong, and Hainan Island.

Callicarpa japonica f. angustifolia was based by Miquel on three unnumbered specimens collected in Japan by Bürger.

Recent collectors describe the plant as a bush or shrub, woody, erect, much-branched, 1--4.5 m. tall, slender, the leaves light-green above, pale beneath, the calyx pale-green, the stamens bluish-pink, the anthers yellow, and the fruit green when immature, finally rosy-purple or black. The corollas are described as "purple" on R. C. Ching 5666, Chung & Sun 406, and E. H. Wilson 1342, "purplish" on R. C. Ching 2977, "rose-purple" on E. H. Wilson 1531, "pink" on E. H. Wilson 2195, "pale-pink" on MacDaniels s.n., and "whitish-pink" on How 71071.

The plant has been found growing in woods, thickets, ravines, valleys, and in shade on hillsides, on rock cliffs and rocky slopes in forests, and along roadsides or streamsides, at 100 to 1500 meters altitude, flowering from June to October, and fruiting from July to October. Wilson refers to it as "common" in thickets, woods, and open country, Tsang says "fairly common in dry sandy soil of thickets", while Ching calls it a "common shrub in open valleys". Chun & Sun refer to it as an "herb", while Tsang calls it a "woody climber, 3 feet tall". Fang erroneously refers to the fruit as "a small nut".

The C. longifolia ascribed to Hemsley and referred to in the synonymy above is in part C. japonica var. angustata and in part C. bodinieri var. giraldii (Hesse) Rehd. The various C. longifolia homonyms ascribed to "Auct.", to Blume, to Linnaeus, to Roxburgh, and to Vahl are all synonyms of C. longifolia Lam., that ascribed to Bentham, to Hance, and "sensu Mori" is C. longissima

(Benth.) Hance, that attributed to Diels is C. bodinieri var. giraldii (Hesse) Rehd., that attributed to Hooker is C. brevipes (Benth.) Hance, and the "sensu Li" homonym belongs in the synonymy of C. japonica var. luxurians Rehd.

Bean (1951) gives the name, C. longifolia, without any further circumscription, as a synonym of C. japonica var. angustata. Li (1963) includes as synonyms "C. parviflora Hayata" and C. randaiensis Hayata, saying "The reduction of C. randaiensis Hayata is made on the basis of the type and the original description. Callicarpa parviflora Hayata has been previously reduced to the synonymy of C. randaiensis by Kanehira." The "C. formosana f. angustata (Rehd.) Moldenke" which he also places in this synonymy is so placed in error. My trinomial, C. formosana f. angustata Moldenke, applies to an entirely different taxon, is based on an entirely different type, and has nothing whatever to do with Rehder's trinomial!

Li (1963) also states that this variety occupies "a distinct geographical area, in central to northwestern and western China" [which, as we have seen above, is not accurate]. "It is a small shrub to about 1.5 m. tall with pink flowers and rosy purple fruits. It was found growing in thickets at 1000—1500 meters in western China by E. H. Wilson in 1900 and again in 1907 (Rehder, 1917). It resembles somewhat C. Bodinieri var. Giraldii of the same general area especially in the more narrow-leaved glabrescent forms of the latter, but it is differentiated by the more oblong anthers opening by a pore at the apex as well as by the smaller but longer-stalked inflorescence." Rehder (1916), by the way, dates Lamarck's original description of C. longifolia (1783) as "1785". P'ei (1932) tells us that C. japonica var. angustata differs from C. dichotoma (Lour.) K. Koch in its "long willow-like leaves which are toothed throughout." Mattoon (1958) lists only one horticultural source.

The printed label accompanying E. H. Wilson 10548 is inscribed "Japan", but Dr. T. Koyama assures me that the locality given on the label is actually in Korea. The Chiao s.n. [Herb. Univ. Nanking 18896] collection seems to be a mixture — the Britton Herbarium sheet is typical C. japonica Thunb., while the United States National Herbarium specimen is plainly var. angustata Rehd.

Material has been misidentified and distributed in herbaria under the names C. bodinieri var. giraldiana (Hesse) Rehd., C. dichotoma (Lour.) K. Koch, C. dichotoma Rausch, C. giraldiana Hesse, C. giraldiana var. rosthornii (Diels) Rehd., C. giraldiana var. subcanescens Rehd., C. japonica Thunb., C. koreana Hort., C. longifolia var. brevipes Benth., C. oligantha Merr., and C. purpurea A. L. Juss.

On the other hand, the Dorsett & Morse 787, Furuse s.n. [3 July 1957], and Savatier 919, distributed as C. japonica var. an-

gustata, are typical C. japonica Thunb.

Rehder (1916) cites also the following: CHINA: Hupeh: A. Henry 6679; C. Silvestri 1954; E. H. Wilson 1342. Kiangsi: E. H. Wilson 1530, 1530a. Shensi: Giraldi s.n. [monte Kin-qua-san, July 10, 1897]. Probably all of these specimens are deposited in the herbarium of the Arnold Arboretum. P'ei (1932) cites: CHINA: Anhwei: R. C. Ching 2977; K. Ling 1189. Hupeh: Chun 4035; A. Henry 6127; C. Silvestri 1954; E. H. Wilson 1342, 1530 (in part), 2195. Kiangsi: Chun 4276; Ip s.n. [Lushan, Jan. 1922]; A. N. Steward s.n. [Lushan, July 1922]; E. H. Wilson 1530 (in part), 1530a. Kiangsu: Chun 4251. CHINESE COASTAL ISLANDS: Hainan: A. Henry s.n. He gives its further distribution as "Japan".

Li (1963) cites from FORMOSA: H. H. Bartlett 6053, Faurie 394 & s.n., Gressitt 315, Hayata & Mori 7023, Kanehira 2878, Kawakami & Mori 2878 & 2879, Matuda 197 & s.n., Suzuki 6986 & s.n., and E. H. Wilson 10848. However, Hayata & Mori 7023 is the type collection of C. randaiensis Hayata, which see, and Kawakami & Mori 2879 is the type collection of C. parvifolia Hayata, a synonym of C. randaiensis.

In all, 76 herbarium specimens, including type material of some of the names involved, and 4 mounted photographs have been examined by me.

Additional citations: CHINA: Anhwei: Cheng 3904 (W-1674256); R. C. Ching 2977 (Ca-347827, S, W-1430584); K. Ling 1189 [Herb. Univ. Nanking 7754] (Ca-259204). Chekiang: Barchet 557 (W-596119); Chiao s.n. [Herb. Univ. Nanking 18896], in part (W-1554165). Hupeh: A. Henry 6127 (N); E. H. Wilson 1342 (N, W-596749), 2193 (W-777380), 2195 (Gg-31986-isotype, N-photo of type, W-777381-isotype). Kiangsi: Chiao 1606 [Herb. Univ. Nanking 18595] (N, W-1554132), 1612 [Herb. Univ. Nanking 18601] (N, W-1554120, Ws), 18625 (N); Chung & Sun 176 (N), 406 (N); Ip s.n. [Herb. Univ. Nanking 1402] (Ca-230384); Lau 4409 (S, W-1753085); A. N. Steward s.n. [Herb. Univ. Nanking 2426] (Bi, Bz-17569, Ca-230390, Io-114024, Mv, W-1279528); E. H. Wilson 1530 (W-777230), 1531 (W-777231). Kiangsu: Cheng 578 (W-1626810). Kwangsi: R. C. Ching 5666 (Ca-409743, N, W-1248672). Kwangtung: Herb. Canton Chr. Coll. 12677 (W-1247930); C. O. Levine s.n. [Herb. Canton Chr. Coll. 1751] (W-877420), s.n. [Herb. Canton Chr. Coll. 3353] (W-1270927); E. D. Merrill 11112 (Ca-301088, Ca-992556, Gg-31978, N); W. T. Tsang 21346 (Ca-11274, I, N, N, S); Tsui 450 (N). Shantung: Chiao 2916 (N, N, W-1599069); Zimmermann 210, in part (S). Shensi: Purdom 909 (W-1092865); Szechuan: Fang 2529 (N); T. C. Lee 3735 (W-1990234); H. Smith 10025 (Go). CHINESE COASTAL ISLANDS: Hainan: A. Henry s.n. [Prov. Hainan] (W-456243); How 71071 (W-1675815). HONGKONG:

Weiss 1705 (Bz-17662). KOREA: E. H. Wilson 8729 (W--1054150), 9405 (W--1054190), 10548 (W--1054254). WESTERN PACIFIC ISLANDS: JAPAN: Amakusa: Hayakawa's collector A.4 (Ca--320694). Honshiu: Alling s.n. [Hondo, 1892] (N); Kobayashi 13608 (S). CULTIVATED: England: I. R. Jones 637-25 (Ba). Massachusetts: Rehder s.n. [E. H. Wilson 633] (Ur), s.n. [Arnold Arb., Aug. 8, 1919] (Ur); Sears s.n. [Arnold Arb. 6712-1-A] (Ba). New York: MacDaniels s. n. [West Hill, Ithaca, July 10, 1940] (Ba).

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ADDITIONAL NOTES ON THE GENUS CASTELIA. II

Harold N. Moldenke

Additional & emended bibliography: A. L. Juss., Ann. Mus. Nat. Hist. Nat. Paris 7: 69--70. 1806; Hook., Bot. Misc. 1: 159 & 172. 1829; Bocq., Adansonia 3: [Rev. Verbenac.] 236. 1863; F. Phil., Cat. Pl. Vasc. Chil. 217 & 221. 1881; Jacks. in Hook. f. & Jacks., Ind. Kew. 2: 493 & 628 (1894) and 2: 1179. 1895; M. Kunz, Anatom. Untersuch. Verb. 55. 1911; Baeza, Nomb. Vulg. Pl. Silv., ed. 2, 63, 176, & 263. 1930; K. V. O. Dahlgren, Svensk. Bot. Tidsk. 32: 231. 1938; Ragonese, Revis. Invest. Agric. 5: 81, 83, & 205--206. 1951; Acevedo de Vargas, Bol. Mus. Nac. Hist. Nat. Chile 25: 40--41. 1951; Darlington & Wylie, Chromosome Atl., pr. 1, 324 & 504. 1955; Angely, Cat. Estat. Gen. Bot. Fan. 17: 3. 1956; Angely, Fl. Paran. 7: 4. 1957; Moldenke, Phytologia 6: 232--241. 1958; Troncoso, Darwiniana 11: 597. 1959; Muñoz Pizarro, Sin. Fl. Chil. 199. 1959; Moldenke, Biol. Abstr. 36: 2311. 1961; Darlington & Wylie, Chromosome Atl., pr. 2, 324 & 504. 1961; Moldenke, Phytologia 7: 368. 1961; Soukup, Biota 4: 141. 1962; Hocking, Excerpt. Bot. A.5: 42 (1962) and A.6: 533. 1963; Moldenke, Phytologia 12: 6. 1965.

The Hooker (1829) reference cited above is sometimes incorrectly dated "1830". Soukup (1962) reports that the tubers of Castelia are edible.

CASTELIA CUNEATO-OVATA Cav.

Recent collectors describe this plant as 20--40 cm. tall, bearing edible tubers and fleshy leaves, inhabiting wet clay slopes and weedy places by irrigation ditches, at 1--2800 meters altitude, fruiting in January and June. The corollas are described as "white" on T. Meyer 3883 and Pfister s.n., "violet" on Angulo & Ridoutt 233, "lilac" on Cárdenas 3712, "rose" on Venturi 7848, and "purple" on H. H. Bartlett 20480. The vernacular name "papilla", recorded by Philippi for this species, is applied also to Valeriana papilla DC. Material of C. cuneato-ovata has been misidentified and distributed in herbaria as Labiatae sp.

Troncoso (1959) makes the following interesting comment: "Es